

Remarks

The Applicant thanks the Examiner for the review of the application. After the Response to Office Action mailed on November 23, 2004, the application contained 18 claims (2-19), of which three (4, 6 and 9) were independent.

Claim 4 has been amended to include all of the limitations of claim 13. Claim 6 has also been amended to include all of the limitations of claim 13. Claim 13 has been cancelled. Claim 9 has been amended to include all of the limitations of claim 18. Claim 18 has been cancelled. New claim 20 is the same as claim 11, but depends from claim 9. Claim 17 has been amended to clarify that the content ratio is volume %.

Thus, seventeen claims (2-12, 14-17, 19 and 20) remain in the application, of which three (4, 6 and 9) are independent.

No fee is required for total claims because the fee already paid for twenty total claims exceeds that which is due for seventeen claims. No fee is required for independent claims either, as there are only three in the application.

Claim 4 has been amended to include all of the limitations of claim 13 regarding volume % content ratio. Claims 2 and 3 depend from claim 4. Claim 6 has also been amended to include the limitations of claim 13. Claim 9 has been amended to include the jet printability limitation of claim 18.

Support in the specification for the amended claims is found as follows, as well as other places: claims 4 and 6 - paragraph [0052]; and original claim 13; claim 9 - paragraph [0052] and throughout, particularly the examples.

Claims 4, 6 and 9 are not anticipated under 35 U.S.C. §
102(b) by Novich et al.

The Office Action rejects former claims 4, 6 and 9 as anticipated by newly cited reference Novich et al. Claims 4 and 6 have been amended to include the limitations of claim 13, which had also been rejected on the same grounds. Claim 9 has been amended to include the limitations of claim 18, which had also been rejected on the same grounds. These rejections are respectfully traversed.

Claims 4, 6 and 9 require that a spherical metal particle slurry in a dispersion medium, with a specific particle size (claims 4 and 6) or sphericity (claim 9), have a sediment density of at least 50%. Claims 4 and 6 further now require that the dispersion medium and the powder be present in volume% ratio of between 1:99 and 40:60 (powder : dispersion medium).

This is equivalent to expressing a volume fraction upper limit of 40% powder, as compared to the dispersion medium. But Novich is explicitly directed to significantly higher volume fraction compositions. See col. 5, l. 10-21, "our invention includes a slurry composition comprising ... in an amount effective to achieve a solids loading of at least 55 v/o and to provide a slurry viscosity of less than 10,000 cPs at 100 sec.⁻¹, more preferably less than about 2,000 cPs, and most preferably less than 1,000 cPs."

Novich expresses the relative amount of total solid as being at least 55 vol%, in terms of solids loading. The solids loading includes the metal powder, and any dispersant. The

concept of solids loading v/o is not precisely equivalent to the concept used in the present claims of volume % content ratio of powder : dispersion medium, since the claimed content ratio does not contemplate a dispersant. However, they can be approximately compared, because it is clear from Novich that the volume % amount of dispersant is nearly negligible as compared to that of the metal powder. See for example Example 1, at col. 9, using 478 g of alumina powder, 62.8 g of alcohol, and 1/2 wt% TEOA, a dispersant. The amount of alumina amounts to 60% by volume. The amount of alumina is 87.9 wt% of the entire mixture. Thus, unless the density of the TEOA is hugely different from that of alumina, its presence at 1/2 wt% will have only negligible effect on the volume ratio of (metal powder: dispersion medium). Thus, it is reasonable to consider the stated metal powder v/o of Novich to be approximately equal to the claimed volume ratio.

In all examples, Novich discloses a solids content v/o of greater than 50 %. Thus, Novich is directed toward the opposite end of the solids volume fraction domain from that claimed here, of at most 40%. And the ranges do not overlap.

Therefore, the rejections of claims 4 and 6 as having been anticipated by Novich are incorrect. Reconsideration and withdrawal are hereby requested.

The Office Action also rejected claims 9 and 18 as having been anticipated under 35 USC § 102(b) by Novich. Thus, it is respectfully requested that the rejections be reconsidered and withdrawn, in light of the amendments herein. Cancelled claim

18, and now amended claim 9 specify that the slurry be jet printable. The specification, at par. [0052] discusses that the preferred viscosity of a metal slurry depends on the method of coating, and further that if the coating method is jet printing, the desired viscosity can be obtained by specifying the content ratio to be between 1:99 and 40:60, as claimed. The specification continues and also specifies a viscosity preference at par. [0053] which states, "[t]he viscosity of a metal slurry for electrode formation is preferably 20 cps or below, more preferably 15 cps or below, and further more preferably 5 to 15 cps."

But Novich provides a viscosity that is significantly larger than this range, and which could not be jet printed. At col. 8, Novich states, "[a]s used herein, ... "low viscosity" generally describe[s] ... the slurry as being able to flow in a constant stream under gravity head;... The slurries have the consistency of from milk (about 500 cPs) to heavy cream (about 2400 cPs) to heavy machine oil (about 7000 cPs)." Thus, even the lowest viscosity slurry disclosed in Novich (500 cPs) exhibits a viscosity of over 200 times that of the highest viscosity slurry disclosed herein. They are in no way comparable, nor could the slurries of Novich be jet printed, without modifying them to the point that they are no longer suitable for the purposes for which they are designed by Novich.

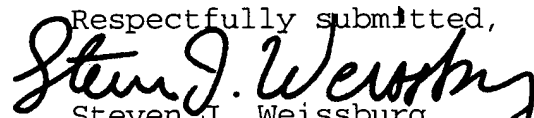
Thus, the rejection of claim 18, and thus amended claim 9 is incorrect, and it is respectfully requested that the rejection be reconsidered and withdrawn.

Applicant is of the opinion that the claims of the present application patentably distinguish over this art or any combination thereof.

Conditional Petition for Extension of Time in Which to
Respond

This response is filed within the three month period set for response. No extension of time is required. If an extension is required, Applicants petition conditionally for an extension of time under 37 CFR 1.136(a) to respond to the office action mailed in this matter on May 24, 2005, for an amount of time as required, up to and including the date of filing of this paper. If an additional extension of time is required, please consider this a petition therefor. The Commissioner is hereby authorized to charge the fee for any such required extension to Account 23-0833, in the name of the undersigned.

The Commissioner is authorized to charge payment of additional fees associated with this communication to Deposit Account No. 23-0833, in the name of the undersigned.

Respectfully submitted,

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